

Division of Chronic Disease, Primary Care,
and Rural Health



Breast Cancer



What is the Impact on Indiana Residents?

Bottom Line

Breast cancer is the second leading cause of cancer death and, excluding skin cancers, the most frequently diagnosed cancer among females in the U.S.¹ The lifetime risk of developing breast cancer among females is one in eight.¹ Breast cancer is typically diagnosed during a screening examination. In the U.S. in 2024, there will be an estimated 310,720 new cases of invasive breast cancer diagnosed in women and 2,790 cases in men, with an additional 56,000 cases of ductal carcinoma in situ (DCIS) diagnosed in women.¹ White and Black females have similar incidence rates; however, Black females have higher mortality rates.² This may be, in part, because of later diagnosis, diagnosis in younger individuals, more aggressive breast cancers diagnosed in Black women, and barriers to health care access.² Today, there are 3.8 million U.S. females who are breast cancer survivors.¹

Females should have frequent conversations with their healthcare providers about their risks for breast cancer and how often they should be screened. Breast cancer is rare among males, as an estimated 2,800 cases will occur among US men in 2023.¹ However, because males often ignore warning signs, they are frequently diagnosed at later stages and have poorer prognoses. During 2023, it's estimated that 530 men are expected to die from breast cancer.¹

Table 5. Burden of Invasive Female Breast Cancer*- Indiana, 2016-2020

*Age-adjusted to the U.S. 2000 Standard Population. Source: Indiana State Cancer Registry

Average number of cases per year (2016–2020)	Rate per 100,000 females (2016–2020)	Number of cases (2020)	Rate per 100,000 females (2020)
Indiana Incidence	5,097	131.0	4,499
Indiana Deaths	880	23.4	842



Who Gets Breast Cancer?

Sex and age are the two greatest risk factors for developing breast cancer. Females have a much greater risk of developing breast cancer (>99 percent of Indiana cases occur among females), and that risk increases with age. Overall, in Indiana from 2016-2020, 84 percent of all breast cancer incidence and 79 percent of breast cancer deaths, occur in females over the age of 50 according to the Indiana State Cancer Registry.⁴

Risk Factors

Factors associated with increased breast cancer risk include weight gain after the age of 18 and/or being overweight or obese (for postmenopausal breast cancer); menopausal hormone therapy (combined estrogen and progestin), physical inactivity, and alcohol consumption.¹ Research also indicates that long-term, heavy smoking increases breast cancer risk, particularly among females who start smoking before their first pregnancy.

- **Family History:** People who have had one or more first-degree relatives who have been diagnosed with breast cancer have an increased risk. Additionally, according to the American Cancer Society (ACS), breast cancer risk increases if a person has a family member who carries the breast cancer susceptibility genes, known as BRCA 1 or BRCA 2, which account for 5 to 10 percent of all female breast cancers. BRCA mutations also account for 5 to 20 percent of all male breast cancers, and 15 to 20 percent of familial breast cancers.¹
- **Race:** In Indiana, during 2016-2020 the breast cancer incidence rates for Black and White females were similar, but the mortality rate for Black females was significantly higher than the rate for whites with the mortality rate for Black females being 29.9 and the rate for White females being 22.0.⁴
- **Reproductive Factors:** Females may have an increased risk if they have a long menstrual history (menstrual periods that start early and/or end later in life), have recently used hormonal birth control, have never had children, or had their first child after the age of 30.¹
- **Certain medical findings:** High breast tissue density, high bone mineral density, type 2 diabetes, certain benign breast conditions, and lobular carcinoma in situ may increase risk for developing breast cancer. In addition, high-dose radiation to the chest for cancer treatment increases risk.¹

Factors associated with a decreased risk of breast cancer include limiting or avoiding alcohol intake, breastfeeding, regular moderate or vigorous physical activity, and maintaining a healthy body weight. Two medications – tamoxifen and raloxifene – have been approved to reduce breast cancer risk in females at high risk.¹



Figure 10. Female Breast Cancer Incidence and Mortality (death) Rates Trends By Race* - Indiana, 2011-2020

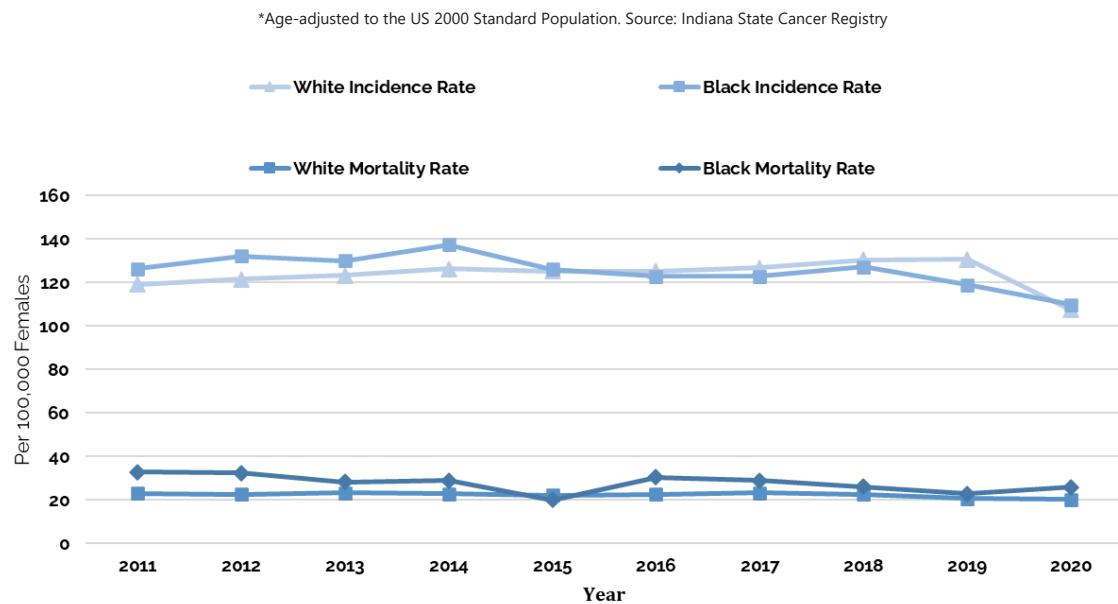
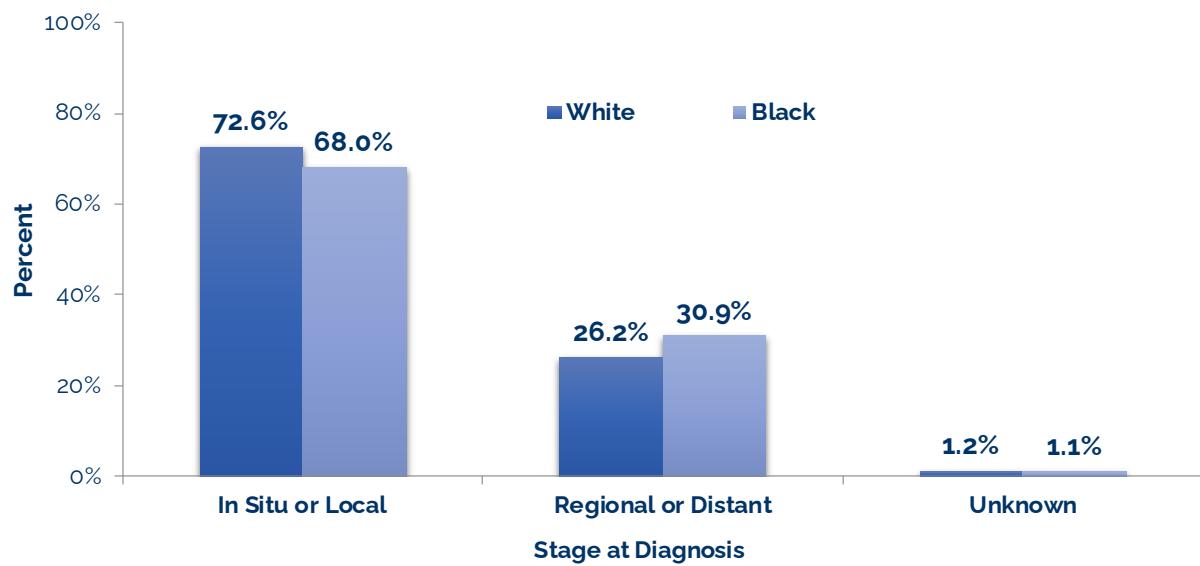


Figure 11. Percent of Female Breast Cancer Cases By Stage of Diagnosis and Race- Indiana, 2016-2020

Source: Indiana State Cancer Registry



Can Breast Cancer Be Detected Early?

Females should have frequent conversations with their healthcare providers about their risks for breast cancer and how often they should be screened. In general, females should follow these recommendations:

- **Breast self-awareness:** Females in their 20s should be aware of the normal look and feel of their breasts, so they can identify potentially dangerous changes. These changes may include a lump, hard knot, or thickening inside the breast or under-arm area; swelling, warmth, redness, or darkening of the breast; change in the size or shape of the breast; dimpling or puckering of the skin; itchy, scaly sore or rash on the nipple; pulling in of the nipple or other parts of the breast; nipple discharge that starts suddenly; and new pain in one spot that does not go away.
- **Screening mammograms:** The United States Preventive Services Task Force (USPSTF) recommends a screening mammogram every two years for females aged 40 to 74, which helps detect cancers before a lump can be felt. Females between the ages of 40 to 49, especially those with a family history of breast cancer, should discuss the risks and benefits of mammography with their health provider to determine if it is right for them. This recommendation was updated in 2024 to include younger women as previously the recommendation was for women aged 50 to 74.
- **Clinical breast exams:** According to the ACS, research has not shown a clear benefit of regular physical breast exams done by either a health professional or through breast self-exams. Women should be familiar with how their breasts normally look and feel and immediately report any changes to a healthcare provider.

While data to reflect the updated recommendation is not yet available, according to the State Cancer Profiles, only 78.1 percent of females aged 50 to 74 years and older had a mammogram during the past two years, with Indiana ranking 35th (rank of 1st = best).³ The Affordable Care Act requires preventive screening services to be included in most insurance policies. Often, these services are paid in full. Individuals should check with their individual insurance providers for specific plan information.

What Factors Influence Breast Cancer Survival?

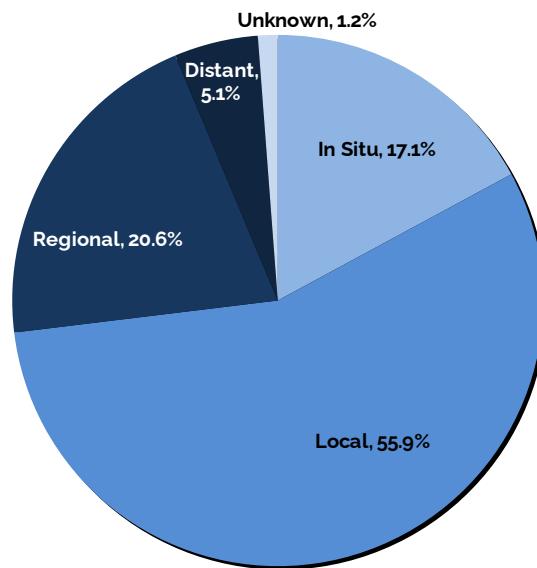
Staging of breast cancer takes into account the number of lymph nodes involved and whether the cancer has moved to a secondary location [Figure 12]. When breast cancer is detected early, before it can be felt, the five-year survival rate is 99 percent.¹ During 2016-2020 of the 30,554 female Indiana residents who received a breast cancer diagnosis, 22,320 (73%) were diagnosed in the in situ or local stage, 7,865 (25.7%) were diagnosed in the regional or distant stage, and 365 (1.2%) had unknown staging.⁴

According to the ACS, there are multiple treatment options available for breast cancer patients. Surgical treatment options include mastectomy (the medical term for the surgical removal of one or both breasts, either partially or completely) and lumpectomy (the removal of only the cancerous area of the breast). Local radiation can be used to treat the tumor without affecting the rest of the body. Other treatments include chemotherapy, hormone therapy, and targeted therapy. These can be given orally or intravenously to reach cancer cells anywhere in the body. An individual's treatment plan is personalized and based both on medical and personal choices. Individuals should partner with their medical providers and be active participants in the development of a treatment and care plan.



Figure 12. Percent of Female Breast Cancer Cases Diagnosed During Each Stage*- Indiana, 2016-2020

*Includes all in situ and invasive cases Source: Indiana State Cancer Registry



Be Aware! Take Charge!

Know the most common symptoms of breast cancer:*

- Hard knots or thickening
- Swelling, warmth, redness, or darkening
- Change in size or shape
- Nipple discharge that starts suddenly
- New pain that doesn't go away
- Pulling in of the nipple or other parts of the breast
- Itchy, scaly sore or rash on the nipple

**Although these symptoms can be caused by things other than breast cancer, it is important to have them checked out by your doctor.*

Know what you can do to help prevent breast cancer:

- Know your risk! Talk to your doctor about your personal and family history and screening.
- Maintain a healthy weight and be physically active
- Be smoke-free and limit or avoid alcohol consumption. Visit www.in.gov/quitline for free evidence-based smoking cessation assistance.
- Limit premenopausal hormone use
- Breastfeed if you can



Resources

1. American Cancer Society. Cancer Facts & Figures 2023. Atlanta, GA. 2023.
2. American Cancer Society. Breast Cancer Facts & Figures 2022-2024. Atlanta, GA. 2024.
3. National Cancer Institute. State Cancer Profiles. Accessed online at <https://statecancerprofiles.cancer.gov/> on April 3, 2024.
4. Indiana State Cancer Registry, 2024

